

In re the Application of:

Group Art Unit: 1634

Robert D. Juncosa et al.

Examiner: Forman, Betty J.

Serial No.: 09/927,820

Filed: August 9, 2001

**For: SCANNING OPTICAL DETECTION
SYSTEM**

AMENDMENT AND RESPONSE

Commissioner for Patents
Washington, D.C. 20231

Dear Commissioner:

In response to the Office Action mailed March 5, 2002, please amend the above-identified application as follows.

IN THE CLAIMS

Please amend claims 27-28 and 31-33 as follows.

27. (Once Amended) A method for optically examining a microlocation on an object comprising the steps of:

illuminating at least a portion of the object by scanning light from a source through a scanning microscope onto the object, and detecting light reflected from the portion of the object through the scanning microscope, wherein the portion comprises an area having a plurality of microlocations,

determining a position of a microlocation in the portion by analyzing the detected reflected light,

B1
cont.
illuminating the microlocation with light from the source through the scanning microscope utilizing the determined position of the microlocation, and

detecting emitted radiation from the microlocation to thereby examine the microlocation.

28. (Once Amended) The method of claim 27 for optically examining a microlocation wherein the step of determining the position of the microlocation includes determining microlocation patterns in the portion by analyzing the detected reflected light, and examining the microlocation patterns to determine the position of the microlocation.

B2
31. (Once Amended) A method for examining at least one microlocation on an object having multiple microlocations separated by interstitial areas comprising the steps of:
simultaneously illuminating multiple microlocations on the object to be examined,
detecting reflected radiation from the object to be examined,
comparing the information constituting reflected radiation with information regarding the structure of the object to be examined to determine position information of a microlocation on the object, wherein the microlocation is chosen from the illuminated multiple microlocations,
illuminating the microlocation through a microscope based upon the position information, and

detecting emitted radiation from the microlocation to thereby examine the microlocation.

32. (Once Amended) The method of claim 31 for examining at least one microlocation on an object having multiple microlocations, comprising examining a plurality of microlocations by illuminating at least two microlocations and one interstitial area, and detecting emitted radiation from the at least two microlocations to thereby examine the microlocations.

B₂
cont. 33. (Once Amended) A method for determining fluorescence intensity from multiple microlocations disposed on the surface of a biological diagnostic system comprising the steps of:

scanning an entire area of the surface of the diagnostic system, said surface having disposed thereon the microlocations, with a laser source directed through a scanning optical system, wherein the microlocations reflect light,

detecting light reflected from the microlocations with a detector,

determining the positions of the microlocations by imaging the reflected light,

illuminating one microlocation from the entire area through the optical system based upon the determined position of the one microlocation, wherein the illumination does not extend substantially beyond the one microlocation, and wherein the one microlocation emits fluorescence,

detecting the fluorescence from the one microlocation via the microscope, where the detector masks emissions from the object in regions other than the one microlocation, and

determining an intensity of the detected fluorescence from the one microlocation.

IN THE SPECIFICATION

Please replace the specification, excluding claims and abstract, with the substitute specification that Applicants are submitting with this Amendment.

REMARKS

In the Office Action mailed March 5, 2002, the Examiner noted that Applicants had not complied with 37 C.F.R. § 1.78(a)(2) and (a)(5) with regard to a claim of priority, and also rejected claims 27-33 under 35 U.S.C. § 112, second paragraph. In addition, the Examiner rejected claims 27-33 under 35 U.S.C. § 102(e) as being anticipated by Stern, U.S. Patent No. 5,631,734.

To address the Examiner's indication that Applicants' claim of priority did not comply with 37 C.F.R. § 1.78(a)(2) and (a)(5), Applicants submit a substitute specification in accordance with 37 C.F.R. §§ 1.121(b)(3) and 1.125(b). The substitute specification does not include any new matter. Applicants respectfully request entry of the substitute specification. Applicants note that a substitute Abstract has already been filed and acknowledged as having been entered. Consequently, the substitute specification does not include an abstract. With entry of the substitute specification, Applicants submit that the Examiner's remark regarding the claim of priority has been adequately addressed.

Turning to the Examiner's rejections of claims 27-33 under Section 112, second paragraph, Applicants have amended the claims in order to address these rejections, and submit

that these rejections have been overcome. Accordingly, Applicants respectfully request that the Examiner withdraw these rejections.

In the Office Action, the Examiner rejected claims 27-33 under Section 102(e) as being anticipated by Stern. Applicants submit that Stern does not disclose, teach, or otherwise suggest the claimed subject matter of all of the limitations of the currently pending claims as amended. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections based upon Stern.

As amended, the present claims are directed to methods for examining a microlocation on an object having multiple microlocations wherein an initial step of the method generally involves illuminating a plurality of microlocations and measuring the light reflected from those microlocations. Then, the position of a particular microlocation amongst the initially illuminated microlocations is determined, that microlocation is illuminated, and emitted radiation or fluorescence is detected therefrom in order to examine the microlocation.

Stern fails to teach, disclose, or suggest all of the limitations of the present claims. Rather, Stern discloses a method and apparatus for detection of fluorescently labeled materials wherein excitation light is directed at a region of the substrate, fluoresced light is collected from that region, excitation light is directed at a different region, and the collection of fluoresced light is repeated until all regions on the substrate have been scanned. (*See* Col. 7, Lines 64-67, and claim 9.) Stern discloses that this may be done by acquiring data continuously along a line until data from all the regions have been collected. (*See* Col. 9, Lines 21-23; *see* Col. 11, Lines 4-16; *see* Col. 12, Lines 39-45.) An image of the fluoresced light is then generated, and the system utilizes the generated image to analyze the substrate. (*See* Col. 15, Lines 25-66; *see* Claim 9.) Stern fails to disclose, teach, or suggest first illuminating an area having a plurality of


microlocations and detecting reflected light from those microlocations, determining a position of a specific microlocation within the area first illuminated, and then illuminating that microlocation again, in order to detect emitted radiation or fluorescence from that microlocation. Because Stern fails to disclose, teach, or suggest all of the limitations of the claims as presently amended, Applicants respectfully submit that the rejections based upon Stern should be reconsidered and withdrawn.

CONCLUSION

By entry of this Amendment, Applicants respectfully submit that all of the Examiner's rejections have been overcome. Applicants respectfully request that the Examiner reconsider and withdraw the outstanding rejections and allow the present application. If, however, the Examiner still regards Stern to have some relevance to the present invention, Applicants respectfully request that the Examiner provide a further, detailed explanation as to how each limitation of the present claims is taught or disclosed. Additionally, the Examiner is invited to telephone the undersigned representative if the Examiner believes that a telephonic interview would advance this case to allowance.

Respectfully submitted,

LYON & LYON LLP

By: 
Polaphat Veravanich
Reg. No. 45,179

Dated: June 4, 2002

Lyon & Lyon LLP
633 West Fifth Street, Suite 4700
Los Angeles, California 90071-2066
(949) 567-2300